REMARKS

Claims 1-11, 14-19, 21-29, and 31-39 are pending in the present application. Claims 1, 3-11, 14, 15, 29 and 31-37 are allowed. The allowability of claims 1, 3-11, 14, 15, 29 and 31-37 is noted with appreciation. Claims 2 and 17 have been amended. These amendments add no new matter to the application.

In the Office Action mailed 2/3/05, the Examiner rejected claims 2, 16-19, 21-28, 38.

Applicants respectfully respond to this Office Action.

Drawings

The Examiner objected to the drawings under 37 CFR 1.83(a) stating that "the memory storage unit and storage medium coupled to the first processor (as in claims 17, 27, 34, 35) must be shown or the feature(s) canceled from the claim(s)." Corrected formal drawings showing this element were entered in a Response to Office Action mailed 6/2/2003.

Claims 2 and 17

In paragraph 4 on page 3, the Examiner rejected claims 2 and 17 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the lines 4 and 7 respectively, the phrase "said received reference data and the reference data" is confusing.

In paragraph 9 on page 8, the Examiner states that claim 2 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. Both claims 2 and 17 have been amended to comply with the Examiner's suggestion.

Claims 16-19 and 21-26

In paragraph 5 on page 3, the Examiner rejected claims 16-19 and 21-26 under 35 U.S.C. §103(a) as being unpatentable over Citta et al. (US 5,260,793) in view of Sadri (US 6,621,808). The Examiner argues that the output of field sync generator 15 is a "pilot signal." The applicant respectfully disagrees with the Examiner's interpretation of Citta. The field sync signals are

timing signals. See col. 2, lines 8-10 of Citta. The field sync signal 15 in the high definition television (HDTV) of Citta at best corresponds to the sync channel on the forward link of a CDMA system. The pilot channel is a different logical channel than the sync channel. There is no information contained in the pilot other than the short PN code with a specific offset. See Samuel C. Yang, CDMA RF System Engineering, Artech House Publishers (1998), p. 98. Consequently, Citta does not disclose a pilot signal.

Claim 26 discloses that "said pre-coded first reference data comprise a dedicated pilot data." The Examiner next states in paragraph 5 that data segment sync source signal 13 is the dedicated pilot signal. As stated above, a sync signal does not correspond to the pilot signal in a CDMA system. Furthermore, FIG. 1 shows that the data segment sync source signal 13 is not pre-coded like the dedicated pilot data of the present invention. This point finds further support in column 4, lines 29-30 of Citta "The synchronizing signals are seen not to be precoded in the transmitter of FIG. 1." Consequently, Citta does not disclose the dedicated pilot signal disclosed in claim 26.

Next, the Examiner admits that "Citta does not expressly disclose the non pre-coded first reference data on a common pilot signal, wherein the common pilot signal is sent on a separate channel from the preceded first data" as disclosed in claim 16. It is noted for the Examiner that claim 16 was amended to read "non pre-coded ~~first~~ second reference data on a common pilot signal . . ." in the response to office action dated 6/8/2004. The Examiner then states that Sadri discloses multiplexing the pilot signal with the data symbols in a series of data frames (see fig. 1). The Examiner then concludes that it would have been obvious to use a common pilot signal which is sent on a separate channel, as that suggested by Sadri, in the transmitting of non pre-coded first reference of Citta in order to facilitate regeneration of the carrier in the receiver and allows user carriers to share the common pilot signal for carrier phase reference.

The applicant respectfully disagrees with the Examiner's interpretation of Sadri. To begin with, the pilot signal 114 disclosed in Sadri is a dedicated pilot channel 114, not a common pilot signal. See col. 6, lines 20-21.

Secondly, as stated above, the non pre-coded second reference data of Citta is the output of field sync generator 15. The field sync signals are timing signals. See col. 2, lines 8-10 of Citta. Thus, for the reasons discussed above, the field sync generator signal would not be transmitted on a common pilot signal.

Furthermore, the Examiner has failed to provide a suggestion to combine the timing signals of the digital video field identification system of Citta with the pilot signal of the WCDMA system of Sadri. In fact, the prior art (see Samuel C. Yang, CDMA RF System Engineering, Artech House Publishers (1998), p. 98) teaches away from combining Citta and Sadri since the pilot channel does not carry timing signals.

For all the reasons discussed above, claims 16 and 26 are not obvious in light of Citta and Sadri.

Claim 17

At the bottom of page 4, the Examiner then states that Citta discloses "a storage medium communicatively coupled to the first processor (17) and containing a set of instructions executable by the processor (column 1, lines 54-60)." In Citta, reference numeral 17 refers to the precoder, and not to a first processor. See column 1, line 45. Furthermore, no storage medium containing a set of instructions is disclosed in column 1, lines 54-60 of Citta. Instead, column 1, lines 54-60 discloses a modulo N precoder. Next, the Examiner states that column 3, lines 50-66 of Citta discloses determining the pre-coder parameters in accordance with the received reference data and the reference data. However, this is incorrect. Instead, column 3, lines 50-66 of Citta discloses representing the data or data segment sync using either 2 level or 4 level symbols.

Therefore, Citta combined with Sadri fails to disclose all the elements of claim 17 and claim 17 is allowable over the combination of Citta and Sadri. Claim 17 is also allowable because it depends on allowable claim 16.

Claims 18 and 19

With respect to claims 18 and 19, the Examiner states that Citta discloses "a second receiver (12) . . ." Reference numeral 12 refers to a linear filter. See col. 4, line 51. The Examiner next states that Citta discloses "a storage medium communicatively coupled to the first processor and containing a set of instructions executable by the processor to (column 4, line 51-column 5, line 38):" No storage medium containing a set of instructions is disclosed in column 4, line 51-column 5, line 38 of Citta. Instead, Citta discloses discrete logic circuits as shown in FIG. 2.

Next, the Examiner states that Citta discloses "determin[ing] the pre-coded parameters in accordance with the received pre-coded first reference data and the non pre-coded second reference data (column 4, line 51 – column 5, line 38)." The applicant respectfully disagrees with the Examiner's interpretation of Citta. Citta uses a linear post coder circuit 12 comprising a feed forward circuit including a delay 14 and a linear adder 16 with a negative feed forward input. See col. 4, lines 42-46. The post coder 12 has notches which are fixed at the NTSC frequencies that have the greatest co-channel interference effects and at DC. Col. 4, lines 42-50 of Citta. Thus, the location of these notches are determined *before* the pre-coded first reference data and the non pre-coded second reference data are received. Thus, its parameters are fixed. The parameters of Citta are not determined *in accordance* with said received pre-coded first reference data and the non pre-coded second reference data as disclosed in claim 18 because Citta's parameters are fixed.

This difference between Citta and claims 18 and 19 finds support in one of the references cited by the Examiner, US patent no. 4,995,057. "Equalizers fall into two broad categories: fixed and adjustable. In a fixed equalizer, the average electrical characteristics of the communication channel are determined and a fixed amount of equalization is then designed into the equalizer which compensates for the distortion characteristics of an average channel. In an adjustable equalizer, the channel is monitored and the equalizer provided in the equalizer is varied so as to provide that necessary to match the distortion characteristic present at the time of monitoring." Col. 1, lines 39-51.

Next, the Examiner admits that Citta does not disclose "a second transmitter communicatively coupled to the second processor configured to transmitting the determined precoder parameters. However, the Examiner argues that Sadri teaches these features. As stated above, the prior art teaches away from combining Citta and Sadri. In addition, Citta combined with Sadri fails to disclose all the elements of claim 18 and claim 19. Claims 18 and 19 are also allowable because they depend on allowable claims 16 and 18 respectfully. Thus, claims 18 and 19 are allowable over the combination of Citta and Sadri for all of the reasons discussed above.

Claims 21 and 24

Claims 21 and 24 are allowable because they depend on allowable claim 16.

Claims 22 and 25

On page 6, the Examiner states with respect to claims 22 and 25 that Citta discloses the apparatus wherein the first transmitter is further configured to transmit the non pre-coded first reference data discontinuously (column 3, lines 56-61). Column 3, lines 56-61 discloses what type of symbols are used to represent the field sync signal of Citta. Thus, Citta combined with Sadri does not disclose all the features of claims 22 and 25. In addition, as stated above, the prior art teaches away from combining Citta and Sadri. Furthermore, Claims 22 and 25 are allowable because they depend on allowable claim 16. Thus, claims 22 and 25 are not obvious in light of Citta combined with Sadri for all of the above stated reasons.

Claims 38 and 39

In paragraph 6 on page 6, the Examiner rejected claims 38 and 39 under 35 U.S.C. 103(a) as being unpatentable over Citta et al. (US 5,260,793) in view of Saints (US 5,903,554).

The Examiner argues that the output of field sync generator 15 is a "second pilot burst (15)." The applicant respectfully disagrees with the Examiner's interpretation of Citta. As stated above with respect to claim 16, the field sync signals are timing signals and do not correspond to a pilot signal. Consequently, Citta does not disclose a second pilot burst.

Next, the Examiner admits that Citta does not disclose the pre-coded reference data is a first pilot signal. The Examiner then argues that Saints teaches a pre-coded pilot signal (57, 55). Reference numeral 57 refers to message generator which generates a pilot fraction signal, not a pilot signal. The pilot fraction signal is an indication of the fraction of the total energy of the signal transmitted by the base station 12 that is used to transmit a pilot signal. Reference numeral 55 refers to an encoder. See col. 4, lines 31-48 of Saints. Thus, Citta combined with Saints fails to disclose all the elements of claim 38 and claim 39.

Furthermore, the Examiner has failed to provide a suggestion to combine the timing signals of the digital video field identification system of Citta with the pilot fraction signal of the CDMA system of Saints. In fact, the prior art teaches away from combining the two references since the pilot fraction signal of Saints does not carry timing information. Therefore, claims 38 and 39 are not obvious in light of Citta combined with Saints for all of the above stated reasons.

Claims 27 and 28

In paragraph 7 on page 7, the Examiner rejected claims 27 and 28 under 35 U.S.C. 103(a) as being unpatentable over Citta et al. (US 5,260,793) in view of Sadri as applied to claim 16 above, and further in view of Chung (US 4,995,057). Applicants arguments with respect to claim 16 also apply to claim 27 and 28.

The Examiner admits that Citta in view of Sadri does not expressly disclose a processor communicably coupled to the at least two equalizers. The Examiner then argues that Chung discloses a equalizer 380, 381 and sampler 384.

The sampler 384 disclosed in Chung does not "determine said pre-coder parameters by adjusting characteristics of the at least equalizers in accordance with the received non pre-coded second reference data and the pre-coded first reference data" as disclosed in claim 27. Likewise, the sampler 384 disclosed in Chung does not "determine said pre-coder parameters by adjusting characteristics of the at least two equalizers in accordance with the non pre-coded second reference data and the pre-coded first reference data by executing a set of instructions to optimize a quality metric of a composite data comprising the equalized non pre-coded second reference data" as disclosed in claim 28. Instead, sampler 384 provides digital signal samples to

digital modulator 385 and excludes the stuffed equalized samples which follow every symbol samples encoded from the binary data coupled from lead 301 or training sequence generator 303. See col. 6, lines 56-61 of Chung. Thus, Citta combined with Sadri and Saints fails to disclose all the elements of claim 27 and claim 28.

Therefore, claims 27 and 28 are not obvious in light of Citta combined with Sadri and Chung for all of the above stated reasons.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

Dated: 4/28/2005

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